

SURE BET PROGRAM

Offered by: Sierra Pacific Power and Nevada Power
Administered by: KEMA, Inc.

Arizona Charlie's Hotel & Casino *Installation of Economizers to improve HVAC Performance*

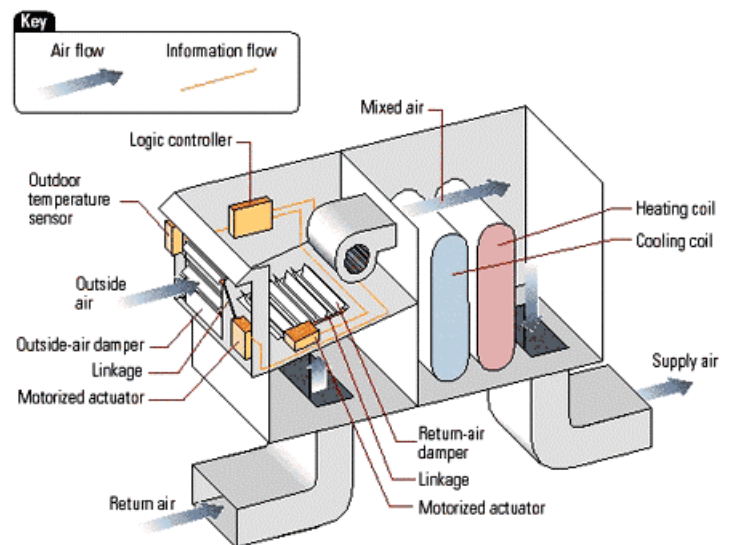
Facility Description

Arizona Charlie's is a hotel casino. The casino portion of the facility is approximately 57,000 square feet. The casino ground floor includes a gaming area, race & sports book, multiple restaurants, hotel registration, back-of-house areas, and other miscellaneous retail shops. The second level includes a large bingo hall, buffet, ballroom, and office space. There are two hotel towers that house a total of 256 guestrooms.

The casino is primarily conditioned from a central plant providing chilled and hot water distribution to 8 air handlers. Cooling in the casino is achieved with chilled and hot water coils and variable-air-volume terminal boxes. In addition, there are 31 rooftop package air-conditioners (RTU). The system maintains airflows and temperature set points 24 hours per day. The hotel rooms are heated and cooled using air-cooled packaged terminal heat pumps in each room.

Project Description

Arizona Charlie's Chief Engineer Anthony Williams decided to pursue the installation of economizers on 28 packaged rooftop air-conditioners. Economizers were not originally specified on the new RTUs when purchased. The cooling load and energy consumption of the RTUs is a significant portion of the total facility-cooling load (297 tons). Economizers would significantly reduce energy costs associated with these units. Mr. Williams made the decision due to the opportunity of extended equipment life and energy savings due to a decreased usage of the RTU's compressors.



Source: Platts

The Sure Bet Team recommended that Arizona Charlie's install dry bulb style economizers on all RTUs larger than 7.5-tons. In addition, EMS programming was required to control the operation of the economizer dampers. Economizing opportunities are especially significant in facilities that operate for 24 hours a day, because they can take advantage of free cooling at night.

In Las Vegas, there are a significant number of cooler temperature hours during summer, spring and fall nights. The previous operation was not taking advantage of the cooling potential of outside air at those times. When outdoor temperatures are low enough, economizers can provide 100% of the supply air without the need for mechanical cooling. Economizers have proven to save anywhere from 15-80% of the energy used for cooling in this climate.

Project Results:

Demand savings	0 kW
Annual energy savings	200,657 kWh
Annual energy cost savings	\$16,053.00
Total project cost	\$46,400.00
Custom incentive	\$6,019.71
Payback period (Years)	2.5